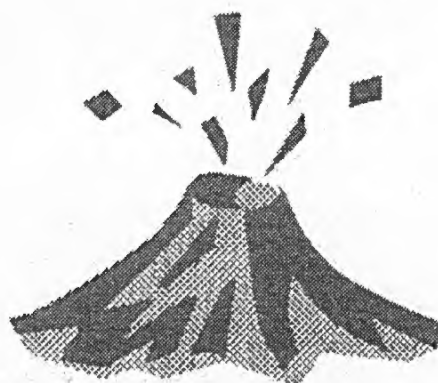


The

February 2005

Ballarat Naturalist



A Natural History of America's Pacific Northwest

Speaker: Carol Hall, Geographer and Club Member

The Pacific Northwest comprises southern British Columbia and the American states of Washington and Oregon. It was these last two that I visited over a 3 week period in July of this year, combining walking with photography.

Due west of Seattle lies Olympic National Park, first set aside as a forest reserve in 1897 and designated a Park in 1938 by F.D. Roosevelt; reasons for this included the protection of old growth forests and the endemic Roosevelt elk, a separate species from those further west in the Rocky Mountains. Olympic N.P. is a dome of sedimentary and metamorphic rocks with an average elevation of 6000-8000', dissected by valleys which underwent severe glaciation during the Ice Age and which radiate out from the centre. 95% of the area is designated wilderness, and the higher peaks have permanent snow.

At lower elevations the forest consists principally of Sitka spruce, Western Hemlock, Douglas Fir and Western Red Cedar with an understorey of big-leaf maple and vine maple, with red alder and black cottonwood on the edges such as river banks. With precipitation between 120"-160" annually, mosses, lichens and ferns grow abundantly, with Spanish Moss growing thickly on the spruce trees. Shallow rooted, the big trees fall in periods of storm, opening up the canopy, letting light in and allowing seeds to germinate and grow rapidly. The fallen trunk begins to decay, forming a nursery for seeds falling from the canopy above, and the developing roots straddle the nursery log, later filling out as buttress roots when the log finally vanishes. Logs falling into the rivers when the banks are undermined by rushing spring meltwater are carried into the ocean, then washed ashore by storms, piling up on the beaches.

Surrounded on three sides by water, the isolation of the park has resulted in the evolution of several endemic species of plants and animals, while some biota found on the mainland don't occur here.

The coast of Washington and Oregon is backed by the Coast Range, a relatively low range of hills no more than 2000' high, mostly formed from basalt. It is a coast characterised by many rocky headlands, promontories, islets, inlets and stacks which are frequently set aside as nature reserves of some kind. Eroded inlets form spectacular blowhole-type features in stormy conditions, while patches of conifers grow on the stacks, starkly outlined against the sea. Many islands provide safe roosting and breeding grounds for birds.

A spectacular example of this was Haystack Rock, a volcanic plug protected as a sanctuary and with the tide pools surrounding it designated a Marine Garden. Where the soil was deeper, Tufted Puffins had their burrows, and Western Gulls used rocky ledges. At lower elevations Pelagic Cormorants and Pigeon Guillemots each had their particular zone, with Brown Pelicans roosting on separate stacks further out. Giant Green Sea Anemones were common in the pools, as were Ochre Sea Stars which clustered thickly on the rocks laid bare by the low tide. Further south, a deeply eroded section of basalt forming a deep and high cave was occupied by a breeding colony of Steller Sea Lions*. Access to the viewing area was by lift, descending 200' through the rock to overlook the cave, full of surging sea water and argumentative creatures.

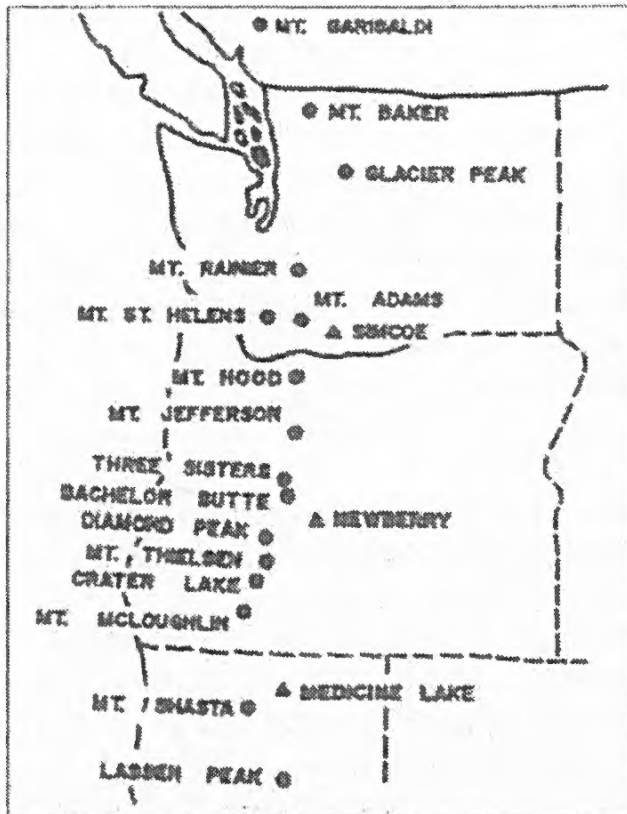
Offshore islands and promontories made for a treacherous coastline and the many lighthouses, most now automated, bear witness to stormy weather brought by the prevailing westerlies. This northern half of the coast receives precipitation all year round with a maximum in the winter. However as one travels into southern Oregon and on into northern California, a Mediterranean climate develops i.e. mild wet winters and hot dry summers, though temperatures are moderated by the influence of the sea.



Here at the southern end of Oregon and extending along the west coast of California, the dominant tree of the coastal rainforest is the Coast Redwood, *Sequoia sempervirens*. Formerly widespread over much of the northern hemisphere in warmer epochs, it is now restricted to a coastal strip 5-25 miles wide as far south as Monterey. It cannot tolerate prolonged cold periods and requires 100" of rainfall annually, growing below 2500'. However the dry summers of the region are not a limiting factor because in summer fogs hug the shore, bringing up to 50% of the trees' moisture needs. Mist condenses on the foliage, dripping to the soil where it can dissolve nutrients needed by the trees, and the high humidity reduces transpiration.

Coast Redwoods were highly sought after as lumber, being particularly resistant to disease and insect attack. Less than 5% now occur in old growth stands, mostly near the Oregon/Californian border. Within the last 150 years > 95% of these forests have been logged at least once. The timber was used for railway sleepers, wine vats, water pipes, shingles, wharves, furniture—the list goes on. Timber extraction was at its height during the gold rush and in the re-building consequent upon the 1906 earthquake which razed San Francisco.

These woods provide shelter and food for over 200 species of vertebrates, among them the Northern Spotted Owl which is considered endangered, requiring as it does old growth forests.. Amongst numerous invertebrates, Banana Slugs were very common, varying in colour from banana yellow to mottled brown and black.



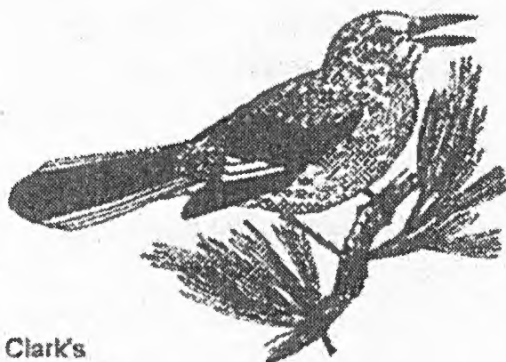
Major volcanoes of the Pacific Northwest

Heading back north we entered the Cascade Range, a series of old and not-so-old volcanoes extending from Mt. Lassen in the south to Mt. Garibaldi just north of Vancouver. This line of volcanoes marks the point at which the tectonic plate underlying part of the Pacific Ocean, and which in its easterly movement is "diving" underneath the North American plate, melts at depth. The lighter molten rock rises to the surface forming volcanoes, several over 10,000' and all of which have erupted at some time in the last 500 years.

Driving up the winding road which brings you to the rim of Crater Lake, you pass huge areas covered in ash and pumice resulting from the eruption of Mt. Mazama

7000 years ago. The explosion of the volcano, and the emptying of the magma chamber beneath, resulted in the collapse of the 12,000' volcano leaving a caldera 5 miles wide and filled with water to a depth in places of nearly 2000'. A secondary cone, Wizard Island, rose from the depths later.

The road arrives abruptly at the rim giving a sudden, stunning view of this brilliant blue lake, its appearance given spice by the remnants of last winter's snow. Twisted, gnarled pines at its edge bear witness to the 13 metres of snow which can fall annually. Golden-



Clark's Nutcracker

mantled Squirrels and Clark's Nutcracker, a bird living off the seeds of the Whitebark Pine, scavenge among the picnic tables. Black-tailed Deer and chipmunks appear on the forest's edge, while the ubiquitous scarlet flowers of Indian Paintbrush add colour contrasts. At sunset, sky and rocks become pink and purple.



Golden-mantled Ground Squirrel

Recent activity at the Newberry National Volcanic Monument is revealed in cinder cones 6000 years old, a mile-long lava tube, and the solidified froth of gaseous lava flows. Here in the rainshadow of the Cascade Range, precipitation is down to 10-20" annually and the rock takes much longer to break down into soil and support plants. Here and there Ponderosa Pines have gained a foothold.

A quick look at Mt. Hood, busy with skiers on a small patch of groomed snow even now in mid-summer, and then on to Mt. St Helens which last erupted in May 1980. A horizontal blast of hot air shot across the slopes to its north when the side of the mountain collapsed, and a landslide washed into Spirit Lake, sending the water surging up the valley sides and removing soil and vegetation. Lines of trees felled at that time by the blast still lie in one direction; Spirit Lake is half covered by timber which has still not rotted; wisps of steam still emanate from the mountain. Since my visit, seismic activity has increased and once again there is a dome of lava bulging on the side of the volcano.

Finally to Mt. Rainier, 14,400' which is visible from Seattle. Spectacular knife-edged ridges, remains of nearby older volcanoes, project above alpine meadows full of colourful flowers and lakes lying in glacial hollows. Twenty six glaciers clothe this volcano, though much reduced in mass since the peak of the Ice Age, and shrinking further in the drier period since 1977. Interestingly, scientists are concerned more about the danger to Seattle and nearby valleys from fast-flowing debris flows of melted ice and ash rather than eruptions of lava. The slopes of the volcano are unstable, being composed of pyroclastic materials of different types; heat from below melts the snow and ice, leading to debris avalanches. Needless to say, all these volcanoes are being closely monitored!

*Georg Wilhelm Steller was a biologist aboard Vitus Bering's 1741 expedition from Kamchatka to the Aleutian Islands.

Carol Hall.

2005 Annual General Meeting

Friday March 4 7.30 pm

Nominations are invited for all committee positions. We will be looking for a new secretary and possibly a new treasurer—do consider joining a friendly group and having your say in what we do. Nomination forms are available from John Gregurke.

Members' slides.

"Coastal Ecology" is the topic—bring up to 12 slides to show us.

Excursion: Chepstowe and Mooramong

Leader: Greg Binns (awarded OAM Australia Day 2005—Congratulations!)

Nine members plus Greg and Genny Binns' granddaughter Ella set out for "Chepstowe" and beyond on a warm, sunny and glary day. As we left Ballarat's limits for a more rural setting, evidence of the cycle of the seasons—farmers baling hay—was everywhere.

In 1990, members of FNCB applied successfully to the Bicentennial Authority for a grant for a project to resuscitate, as it were, the Australian native Anchor Plant, *Discaria pubescens*. It was reasonably widespread along basalt plains streams and in the high country prior to European settlement, but became endangered through grazing by introduced livestock and feral animals. With the requisite funds members at the time propagated these plants from seeds from Lal Lal and Snizort at the state nursery at Creswick and these seedlings were eventually planted out at four sites viz. Lal Lal, Snizort, Chepstowe and Mooramong. The Anchor Plant derives its name from the shape of the outermost leaves on a stem forming in rough outline a ship's anchor.

As we turned off the Ballarat Beaufort Road into the Streatham Road and the entrance to Chepstowe property we crossed Baillie Creek with a fair flow from run-off. Baillie Creek is the outlet for Lake Burrumbeet and in turn it flows into Mt. Emu Creek and then in turn into the Hopkins River, entering the sea at Warrnambool. Later we would come to the town of Skipton where a company Eels Australia has been harvesting this freshwater resource for nearly forty years with a processing plant on the banks of Mt. Emu Creek.

In Australia adult eels return to the sea in autumn to breed probably near New Caledonia in the Pacific Ocean. The elvers, already 18 months old, enter the river mouths each spring and penetrate upstream particularly in high level or flood time. Local lakes are used to culture eels. This food is marketed in the Netherlands, Germany, Sweden and Asia.

At Chepstowe there is a fair bit of Tree Violet *Hymenanthera dentata*. The Anchor Plants "rediscovered" appeared stressed; fourteen and thirteen respectively of the eighteen original plants in each patch were still alive and seeds were being produced but there was no evidence of local regeneration from seed, unfortunately. A Yellow-rumped Thornbill was observed and crickets chirruped in their underground hide-outs. Carol Hall found a Blue Devil, a small spiky plant with a fruit reminiscent of a caltrop but with more spikes.

On the way to Lake Goldsmith, White-necked and White-faced Herons were observed on dams, also a Little Pied Cormorant. Mt Emu dominated the horizon. From the SE embankment of Lake Goldsmith we saw the lake bottom covered with various grassy species with some water in the distance. Birds observed were Richard's Pipit, Brown Falcon, flock of Goldfinches and Little Ravens actively sought out

grubs in freshly mown fields. A Grey Shrike-thrush was heard calling.

Pressing on we arrived at Skipton on the Glenelg Highway at 11.45 am and pulled into Jubilee Park for lunch. A Red Wattlebird flitted between many species of eucalypts in the Park and the humming of bees was heard everywhere.

The last destination was National Trust property "Mooramong" where 20 Anchor Plant seedlings had been planted. Healthy stands of *Phalaris* grew on the road reserves. There is a series of dams and swamps on this property. Claire Dalman spied two Brolgas on Horseshoe Swamp. Other birds seen were White-faced and White-necked Herons (a lot), Great Egret, Royal and Yellowbilled Spoonbills, Blackwinged Stilts, Straw-necked and White Ibis, Masked Lapwing, Grey Teal, Black Duck, Dusky Moorhen and Willy Wagtail. Vegetation included *Banksia* sp., Clustered Everlasting *Chryscephalus semi-papposum*. Twelve of the twenty Anchor Plants had survived and these were very heavily seeded. Again there was no evidence of new plants growing from dispersed seed.



Royal Spoonbill

Jack Netherway reported first hearing the call of the Little Grass Bird and observing a Black Swan. Adjacent to the homestead is a practically brand new bird hide—nothing new to report here. From "Mooramong" we bid adieu and dispersed.

Tony Johns.

December Meeting Points

28 members and two visitors were welcomed.

- Midland Forest naming: A letter sent advising that in general with respect to the Enfield Forest area the Club used the names on locations and road signs but advised that the Club considered the Bedggood name could be used at Enfield in memory of Stella Bedggood.
- Kit Williamson's Books: Kit has donated her books on natural history to the Club. The books were sorted into those that will be added to the Club library, and those that will be sold to club members.
- Suggestions for speakers and excursions for 2005/6. Peter Billing – John Harrison (already scheduled), Ken McDonald – Quolls (perhaps DSE speaker) and lichens/mosses with speaker Helen Burgess previously hosted, Avis Barlow – evening excursion to Observatory, and evening trip to Mooramong to observe bandicoots.
- Nominations required for Committee for 2005.
- Lake Burrumbeet and Lake Learmonth combined Advisory Committee meeting at Horticulture Centre at 7:30pm on Tuesday 7 December 2004. Greg Binns advised that

Roger Thomas would speak on Flora and Fauna of the lakes and that there was an invitation to attend.

■ Show and Tell

Peter Billing: Peregrine falcons in limited numbers have been featured in newspapers.

Field Reports

- Frank Harrop: Male koalas very noisy around midnight in 209 Shaw Ave Mt Helen from 31 Nov to 2 Dec.
- Tony Johns: Pair ringtail possums scampering along insulated power line across Eyre Street about 23 Nov.
- Don Hunt: New Holland Honeyeater nest with three eggs – Buninyong 15 Nov.
- Peter Billing: Small koala seen on roadside near Winchelsea on Friday 26 November.
- Dulcie Brook: Wood duck nesting in fork of *Eucalyptus Ovata* tree in Wendouree a long way from the lake. Long billed corella also noted in the same tree.
- Claire Dalman and Ken Hammond: Long billed corellas in Wendouree.
- Greg Binns: Three wedge tailed eagles soaring south of Weribee Gorge on 2 Dec. Silver gull attempting to swallow an eel approximately 20 cm long at Lake Burrumbeet in late November.
- John Mildren: Pair Brolgas on wetlands near Cressy.
- Helen Burgess: Magpies nesting at her home in Brown Hill. Of two offspring from last year with one is still with the parents and also feeds new baby.
- Carol Hall: One swan on Lake Wendouree has six cygnets. There has been a total of 44 cygnets this year with all being marked for identification. Some have already been lost. The male swan that 'incubated' bottles abandoned them after 80 days. No female was observed with the nest during the time it sat.
- Ken Hammond: Bird Observers Club visited Lake Burrumbeet observing lots of Grey Teal, Black-winged Stilts, Avocets, six Marsh Sandpipers, 30 Sharptailed Sandpipers, 33 Pelicans soaring on a thermal, a couple of Cormorants and lots of Whiskered Terns.
- Les Hanrahan: Many white butterflies with brown edges, some yellow. Could be Woody whites.
- Avis Barlow: Huge koala at her home in Mt Helen which seemed to be attracted to the noise of a pressure cleaner. Used to be many koalas but now more rarely seen.
- Lyndsay Fink: On a warm, humid night many little insects hatched and clustered in columns. The insects included some lovely moths from about 6mm to 30mm. One had lovely rich brown, fawn and white markings and was bright orange underneath. This small moth came from a leaf curling caterpillar. The bigger moths were green colours with white edges and some dark patches. These come from the looper caterpillar both these caterpillars and moths are not popular with gardeners. Other interesting insect were one Brown Lacewing (Hemerobiidae family) and three Green lacewings (Nymphidae family) Lacewings eat aphids and other soft insects and are therefore popular with gardeners.

Calendar

February

Fri. 4 *The Western Australian Experience*—Members Christie/Dalman/Hall/Gregurke.
Sun. 6 Excursion to the *Bellarine Peninsula* led by club members.
Tues. 22 Committee Meeting (@)

March

Fri. 4	AGM and members' slides and prints: " <i>Coastal Ecosystems</i> ".
Sun. 6	Excursion to the Bellarine Peninsula led by club members.
Fri-Mon 11-14	SEANA Campout hosted by Upper Goulburn FNC.
Sun. 20	FNCV Open Day (@ Displays, Special Interest Groups.)

Supper Duty:

February: Del McDonnell.

March: Volunteers please.

Committee

President Mr. Peter Dalman

Vice-President..... Mrs. Carol Hall

Secretary..... Mr. John Gregurke

Treasurer.....Mr. Bob Curtain

Mr. Greg Binns

Miss Helen Burgess.....

Miss Maureen Christie.....

Mrs. Claire Dalman.....

Mrs. Carol Hall (Editor).....

Miss Fran Hanrahan.....

Mr. Les Hanrahan.....

Correspondence: PO. Box 328W, Ballarat West, 3350.

Email: Secretary:

Editor:

Website: www.ballarat.yourguide.com.au Click on *Local Info*, *Search Environment*.

Meetings are held at the Ballarat Horticultural Centre, cnr. Gregory & Gillies Sts (VicRoads 254 F8) on the first Friday of the month at 7.30pm.

Excursions: Depart from Ballarat Market Place (formerly Creswick Plaza) Creswick Rd., Ballarat (VicRoads 255 M10) at 9.30 am unless otherwise specified.

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